

WHAT IS CLAIMED IS:

1. A support for a plurality of inkjet printhead segments, said support including:

a hollow elongate member having at least one ink supply channel formed therein, the or each ink supply channel being in fluid communication with an elongate slot in and extending at least partly along the elongate member; and

a plurality of printhead segment carriers received and secured in neighbouring arrangement within the slot, each printhead segment carrier being adapted for mounting thereto of at least one printhead segment,

wherein each printhead segment carrier includes at least one ink gallery arranged so as to connect the or an associated one of said ink supply channels with an ink inlet of said at least one printhead segment when mounted to that printhead segment carrier.

2. A support according to claim 1, wherein when mounted to the support the at least one printhead segment on each printhead segment carrier has a defined printing range in a direction lengthwise along the elongate member, and wherein the printing ranges of the printhead segments mountable to a plurality of adjoining printhead segment carriers overlap, thereby to define a combined printing range of greater lengthwise extent than any of the printing ranges comprised therein.

3. A support according to claim 1, wherein the printhead segment carriers are substantially identical to one another and have stepped terminal ends thereby to enable neighbouring pairs of printhead carriers to be mounted within the slot in orientations substantially oppositely to one another in a direction transverse to the elongate member.

4. A support according to claim 3, wherein each stepped terminal end of a carrier includes inner and outer end faces extending substantially transversely

within the slot from points at least approximately midway across the slot, said inner and outer end faces being spaced apart in a direction along the slot, and wherein said terminal ends are shaped mirror-symmetrically so that the outer end faces are further apart in a direction along the elongate member than the inner end faces

5. A support according to claim 4, wherein each printhead segment carrier has an elongate recess in an external surface of the carrier within which at least one printhead segment is received when mounted to the printhead segment carrier and wherein said recess extends along the carrier between ends each located longitudinally between said end faces of a terminal end, whereby recesses of neighbouring pairs of carriers overlap in a direction along the elongate member.

6. A support according to claim 5, wherein opening into said recess of each printhead segment carrier is at least one elongate ink delivery slot extending therealong, the or each of which is in fluid communication with one only said ink supply channel via the or a said ink gallery extending from said at least one ink slot to an opening in a rear face within the slot of the printhead segment carrier.

7. A support according to claim 6, wherein in fluid communication with the or each ink delivery slot, there is a plurality of said ink galleries and said openings and wherein said openings associated with the or each said ink delivery slot are arranged in a row extending in a direction along the elongate member.

8. A support according to claim 7, having a plurality of ink supply channels and in each printhead segment carrier a plurality of said rows of openings, each row being aligned along its length with one said ink channel for passage of ink from said ink channel through said row of openings.

9. A support according to claim 8, wherein between the inner end faces of each printhead segment carrier, boundaries of the ink galleries are defined by a plurality of parallel walls extending transversely in the carrier and intersecting therewith a plurality of converging walls extending from the rear face to shaped inner edges which at least partially define the ink delivery slots.

10. A support according to claim 8, wherein at each terminal end of each printhead segment carrier at least one said ink gallery is defined between the inner and outer end faces at that terminal end by walls extending transversely in the carrier and, intersecting therewith, a plurality of converging walls extending from the rear face to shaped inner edges which at least partially define parts of the ink delivery slots between said inner and outer end faces.

11. A support according to claim 1, further including a shim shaped to be received in the slot in the elongate member and to lie between the elongate member and said printhead segment carriers, said shim having at least one aperture therein to permit flow of ink between the or an associated one of said ink supply channels and a corresponding one ink gallery of the respective printhead segment carrier.

12. A support according to claim 11, wherein the shim and the slot are substantially semi-circular in cross-sectional shape.

13. A support according to claim 11, wherein the shim and/or the elongate member comprise means for snap-fittingly mounting said shim at said slot.

14. A support according to claim 11, wherein the shim is adhesively bonded to mating surfaces of the elongate member.

15. A support according to claim 11, wherein the printhead segment carriers are adhesively bonded to the shim.

16. A support according to claim 11, wherein to edges extending in a direction along the shim are attached webs which abut external surfaces of the elongate member.

17. A support according to claim 1 wherein each printhead segment carrier has a recess formed in an external surface thereof within which at least one printhead segment is received when mounted to the printhead segment carrier and wherein said external surface has a second recess formed therein and adapted to receive at least a part of a power or signal conductor terminating on the or one said printhead segment mounted to the printhead segment carrier.

18. A support according to claim 17, wherein said conductor comprises a tape automated bonded (TAB) film.

19. A support according to claim 18, wherein said tape automated bonded film (TAB) is wrapped around an external surface of the elongate member and terminated on a printed circuit board secured to a side of the elongate member opposite to the printhead segment to which it is connected.

20. A support according to claim 1, further including a first cap secured to a first terminal end of the elongate member and having an ink inlet port in fluid communication with the or an associated one of said ink supply channels.

21. A support according to claim 20, further including a second cap secured to a second terminal end of the elongate member and having an opening for bleeding of air from the or an associated one of said ink supply channels, said support further including means for sealing off said opening after such bleeding.

22. A support according to claim 21, wherein said second cap includes an outer face with a tortuous channel formed therein, said tortuous channel being in

fluid communication with said opening and wherein said sealing means includes a film removable at least in part from the outer face and adapted to adhere to the outer face thereby to cover the tortuous channel and seal off the opening.

23. A support according to claim 1, further including an external protective shield plate covering the printhead segment carriers and having openings arranged to permit unimpeded passage of ink ejected from nozzles of printhead segments mounted to the carriers towards a surface passing beneath the support.

24. A support according to claim 1, wherein the elongate member has three, four or six of said ink supply channels, one each for a preferably differently colored ink.

25. A support according to claim 1, wherein each printhead segment carrier is mounted within the slot at a longitudinal position within a predetermined tolerance distance of a designated longitudinal position of the carrier corresponding to a designated longitudinal position within the slot of a printhead segment when mounted to said printhead segment carrier.

26. A support according to claim 1, wherein the elongate member is of substantially constant cross-sectional shape along its entire length.

27. A support according to claim 1, wherein in cross-section the elongate member includes a peripheral structured wall including a base wall section, and side wall sections standing out from opposing edges of said base wall section, and wherein said slot lies between free edges of said side wall sections.

28. A support according to claim 27, wherein said elongate member further includes at least one internal web standing out from the base wall section and extending along said elongate member.

29. A support according to claim 28, wherein said elongate member has a plurality of said internal webs and wherein in cross-section said free edges of the side wall sections and free edges of said internal webs lie on a semicircle and define boundaries of said slot so that said slot is of semicircular cross-section.

30. An inkjet printhead assembly including:

a hollow elongate member having at least one ink supply channel formed therein, the or each ink supply channel being in fluid communication with an elongate slot in and extending at least partly along the elongate member; and

a plurality of printhead segment carriers received and secured in neighbouring arrangement within the slot; and

at least one printhead segment mounted to each printhead segment carrier,

wherein each printhead segment carrier includes at least one ink gallery arranged so as to connect the or an associated one of said ink supply channels with an ink inlet of the at least one printhead segment mounted to that printhead segment carrier.

31. An inkjet printhead assembly according to claim 30, wherein the at least one printhead segment on each printhead segment carrier has a defined printing range in a direction lengthwise along the elongate member, and wherein the printing ranges of the printhead segments mounted to a plurality of adjoining printhead segment carriers overlap, so that the printhead segments mounted to said adjoining plurality of printhead segment carriers have a combined printing range of greater lengthwise extent than any of the printing ranges comprised therein.

32. An inkjet printhead assembly according to claim 30, wherein the printhead segment carriers are substantially identical to one another and have stepped terminal ends thereby to enable neighbouring pairs of printhead carriers to be

mounted within the slot in orientations which are substantially opposite to one another in a direction transverse to the elongate member.

33. An inkjet printhead assembly according to claim 32, wherein each stepped terminal end of a carrier includes inner and outer end faces extending substantially transversely within the slot from points at least approximately midway across the slot, said inner and outer end faces being spaced apart in a direction along the slot, and wherein said terminal ends are shaped mirror-symmetrically to each other so that the outer end faces are further apart in a direction along the elongate member than the inner end faces.

34. An inkjet printhead assembly according to claim 33, wherein each printhead segment carrier has an elongate recess in an external surface of the carrier and the at least one printhead segment associated with the carrier is mounted in said recess, and wherein said recess extends along the carrier between said outer end faces of a terminal end, whereby said recesses of neighbouring pairs of carriers overlap in a direction along the elongate member.

35. An inkjet printhead assembly according to claim 32, wherein each printhead segment carrier has an elongate recess in an external surface of the carrier and the at least one printhead segment associated with the carrier is mounted in said recess, and wherein said elongate recesses of neighbouring printhead segment carriers overlap lengthwise.

36. An inkjet printhead assembly according to claim 30, further including a shim received in the slot in the elongate member and lying between the elongate member and said printhead segment carriers, said shim having at least one aperture therein to permit flow of ink between the or an associated one of said ink supply channels and a corresponding one ink gallery of the respective printhead segment carrier.

37. An inkjet printhead assembly according to claim 36, wherein the shim and the slot are substantially semi-circular in cross-sectional shape.
38. An inkjet printhead assembly according to claim 36, wherein the shim and/or the elongate member comprise means for snap-fittingly mounting said shim at said slot.
39. An inkjet printhead assembly according to claim 36, wherein the shim is adhesively bonded to mating surfaces of the elongate member.
40. An inkjet printhead assembly according to claim 36, wherein the printhead segment carriers are adhesively bonded to the shim.
41. An inkjet printhead assembly according to claim 36, further including first and second end caps sealingly secured to respective terminal ends of the elongate member and wherein said shim abuts respective formations on said caps.
42. An inkjet printhead assembly according to claim 41, wherein said shim is adhesively bonded to said formations.
43. An inkjet printhead assembly according to claim 30, wherein each printhead segment carrier has an elongate recess in an external surface of the carrier and at least one of the printhead segments is mounted in said recess, wherein said external surface has a second recess formed therein and wherein at least a part of a power or signal conductor terminating on the or one said printhead segment mounted to the printhead segment carrier is received in said second recess.
44. An inkjet printhead assembly according to claim 43, wherein said conductor comprises a tape automated bonded (TAB) film.

45. An inkjet printhead assembly according to claim 43, wherein said conductor is wrapped around an external surface of the elongate member and terminated on a printed circuit board secured to a side of the elongate member opposite to the printhead segment to which it is connected.
46. An inkjet printhead assembly according to claim 30, further including a first cap secured to a first terminal end of the elongate member and having an ink inlet port in fluid communication with the or an associated one of said ink supply channels.
47. An inkjet printhead assembly according to claim 46, further including a second cap secured to a second terminal end of the elongate member and having an opening for bleeding of air from the or an associated one of said ink supply channels, said support further including means for sealing off said opening after such bleeding.
48. An inkjet printhead assembly according to claim 30, further including an external protective shield plate covering the printhead segment carriers and having openings arranged to permit unimpeded passage of ink ejected from nozzles of printhead segments mounted to the carriers towards a surface passing beneath said assembly.
49. An inkjet printhead assembly according to claim 30, wherein the elongate member has three, four or six of said ink supply channels, one each for a preferably differently colored ink.
50. An inkjet printhead assembly according to claim 30, wherein each printhead segment carrier is mounted within the slot at a longitudinal position within a predetermined tolerance distance of a designated longitudinal position of

the carrier corresponding to a designated longitudinal position within the slot of a printhead segment mounted to said printhead segment carrier.

51. An inkjet printhead assembly including:

a hollow elongate member of substantially constant cross-section along its length having a base wall, two sidewall sections standing out from the base wall, and at least one internal web extending inwardly from said base wall, said sidewall sections and webs defining a plurality of ink supply channels each in fluid communication with a slot extending along the member and free edges of said sidewall sections and said at least one internal web defining a periphery of a slot extending along the member;

a plurality of printhead segment carriers received and secured in neighbouring arrangement within the slot;

at least one printhead segment mounted to each printhead segment carrier; and

means for connection of each said ink supply channels to a respective ink supply source,

wherein each printhead segment carrier includes at least one ink gallery arranged so as to connect the or an associated one of said ink supply channels with an ink inlet of the at least one printhead segment mounted to that printhead segment carrier.

52. An inkjet printhead assembly according to claim 51, further including a shim extending at least partway along the slot, a first side of said shim abutting said sidewall sections and said internal webs and said printhead segment carriers abutting a second side of said shim, and wherein each said ink gallery is in fluid communication with the or one said ink supply channel via an opening in said shim.

53. An inkjet printhead assembly according to claim 52, further including first and second end caps sealingly secured to respective terminal ends of said elongate member, each cap having a formation abutting said shim.

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54. A method for assembling an inkjet printhead assembly according to claim 30 wherein the step of mounting to each printhead segment carrier its respective at least one printhead segment precedes the step of securing that printhead segment carrier within the slot.

55. A method according to claim 54 wherein the printhead segment carriers are secured within the slot sequentially, and wherein the at least one printhead segment in each printhead segment carrier installed after the first is positioned longitudinally relative to the at least one printhead segment in the printhead segment carrier last installed before being finally secured and immobilized within the slot.

56. A method according to claim 54 wherein printhead segments are tested for correct operation between installation in their respective printhead segment carriers and installation of their respective printhead segment carriers in the slot.